



Mt Suswa CAVES

The geology of Mt Suswa is characterized by its volcanic origin and the formation of various features such as a shield-shaped volcano, a large caldera, lava flows, and lava tunnels.

Mt Suswa (2356 m / 7730 ft) is a Stratovolcano formed approximately 1 million years ago during the middle Pleistocene. It is situated in the Great Rift Valley, and its volcanic activity resulted in the eruption of molten lava from a north-south trending fissure vent. The erupted lava and pumice accumulated over time, building up an asymmetrical shield-shaped volcano that covered an area of about 90 square kilometers.

During the later stages of volcanic activity, the top of the mountain collapsed into the partially depleted magma chamber beneath it, forming a wide and shallow caldera. This caldera is the largest known caldera in Kenya, with a diameter of about 10 kilometers. Subsequently, lava flows filled the floor of the caldera.

After a period of quiescence, volcanic activity resumed, giving rise to a new volcanic cone named Ol Doinyo Nyukie (Red Mountain). Lava from Ol Doinyo Nyukie flowed predominantly toward the east and southeast across the caldera floor, breaching the eastern caldera wall and descending the flanks of the original volcano.

It is within one of these lava flows, located on the eastern slopes of Mt Suswa, that most of the lava tunnels or caves are found. These tunnels were initially brought to public attention in 1962 by a government geothermal prospector named Mr. Hobden. He discovered collapse holes leading to large tunnels in the pahoehoe lava. Dr. P. E. Glover and his sons Campbell and John explored and documented the caves, with their work published in the London Journal - Studies of Speleology in 1964.

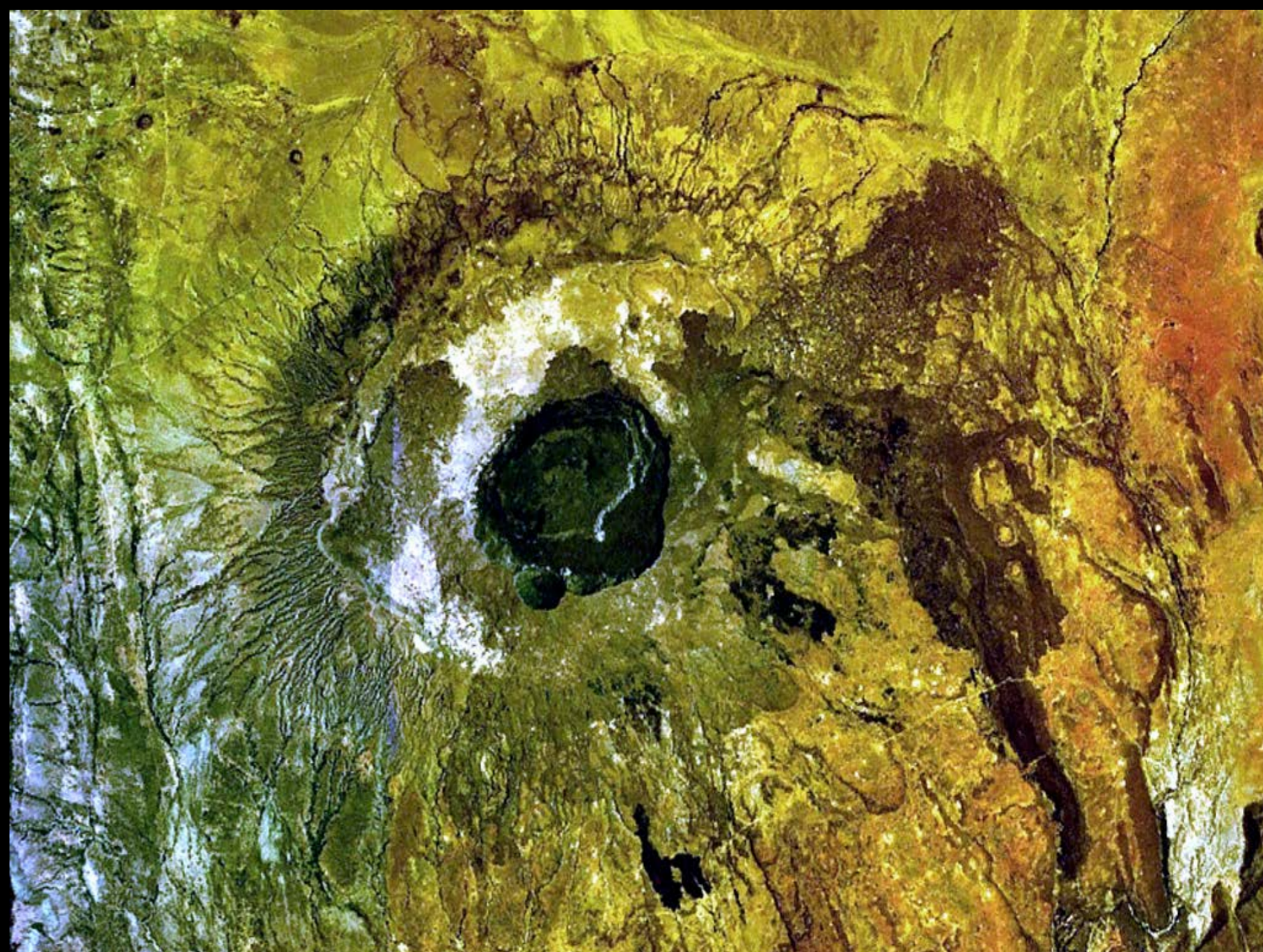
The diverse geology and unique features of Mt Suswa, including the lava tunnels, have attracted scientific interest of **Jim W. Simmons** and efforts for their preservation. The Cave Exploration Group of East Africa was established in 1964 as a result of the fascination with the lava tubes of Mt Suswa. Dr. Glover was elected as the first Honorary Chairman for the Association.

Dr. Glover's exploration of the caves in Mt Suswa revealed evidence of human activity throughout history. He discovered obsidian artifacts and stone tools, indicating the presence of primitive man in the caves. Local Maasai people confirmed that the caves had been visited by the Wandorobo (Okiek) hunter-gatherers.

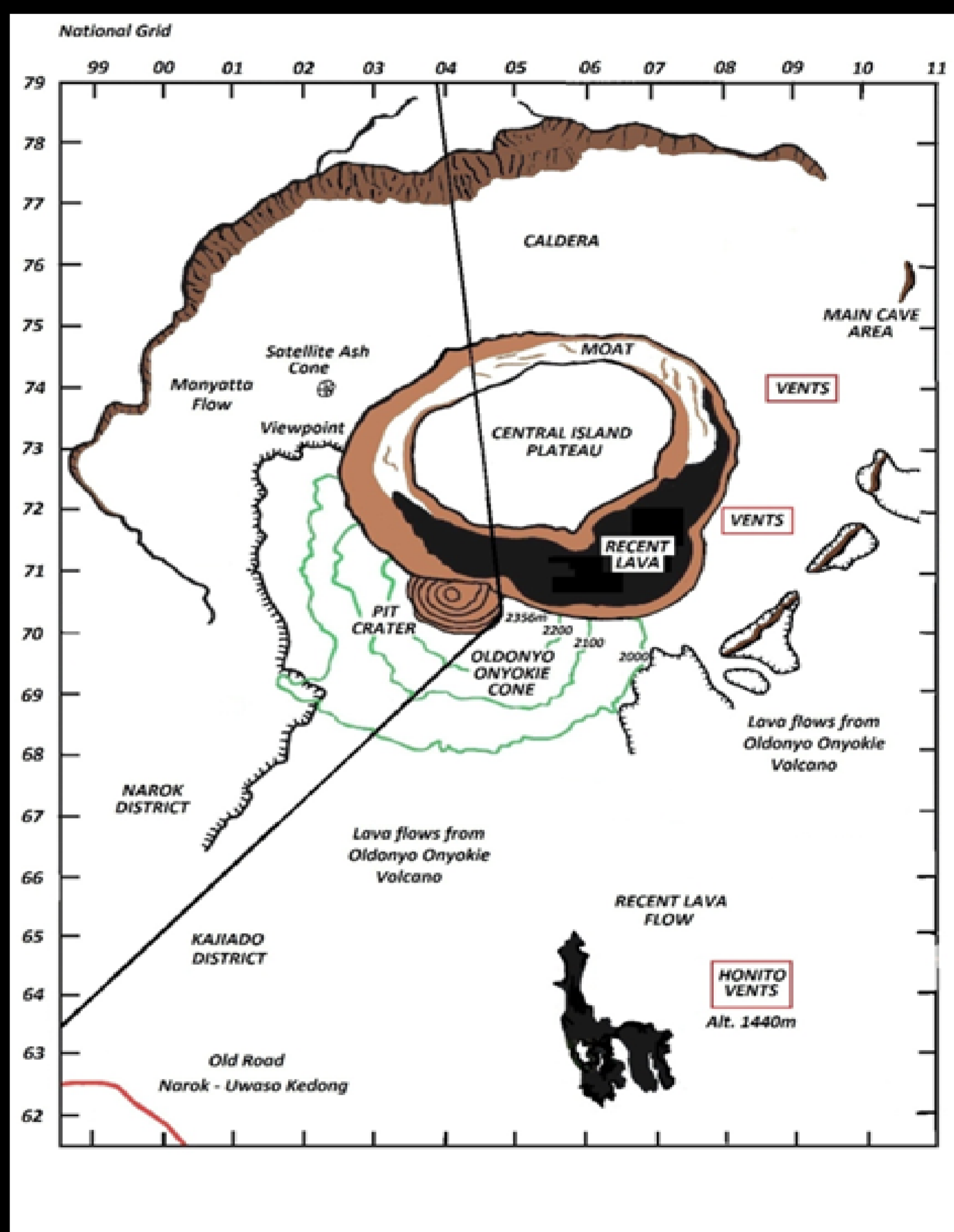
Additionally, during the Mau Mau Emergency (1952-1960), the caves served as refuges for Mau Mau freedom fighters. However, the Maasai themselves were reluctant to venture deep into the caves and generally stayed near the entrances, as noted by Dr. Glover in 1965.

Motivated by these discoveries, Dr. Glover initiated a scientific study of the caves. Together with Jim W. Simmons and other interested individuals, they began mapping the area and conducting surveys of the caves. These efforts aimed to document and understand the geological and archaeological significance of the caves in Mt Suswa.

Jim W. Simmons, born on October 2, 1940, and passed away on March 13, 2018, was a notable figure in the field of speleology. He was not only a co-founder of the Cave Exploration Group of East Africa but also played a pivotal role in the exploration, description, and preservation of the lava caves in Mt Suswa. His contributions to the study of these caves have established him as one of the most significant speleologists in the region.



Global Volcanism Program, 2023. [Database] Volcanoes of the World (v. 5.0.4; 17 Apr 2023). Distributed by Smithsonian Institution, compiled by Venzke, E. <https://doi.org/10.5479/si.GVPVOTW5-2022.5.0>



Jim W. Simmons Blow-hole vents of Mt. Suswa



Jim W. Simmons Picture Clive King

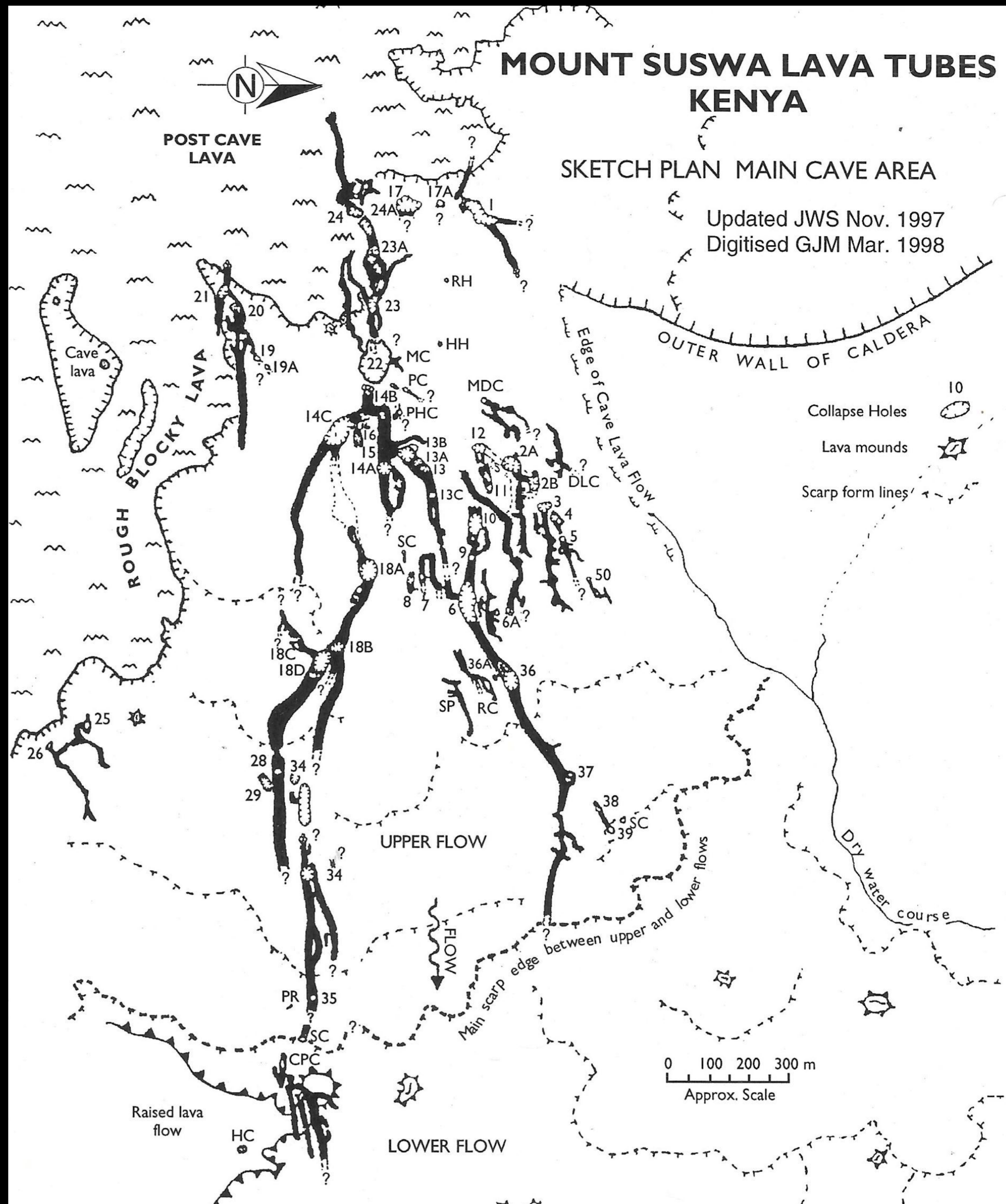


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Lava tube, also known as a pyroduct, is a natural tunnel or conduit formed by the flow of lava from a volcanic vent. As the lava moves beneath the surface of a lava flow, it gradually cools and solidifies, creating a hardened crust or roof over the flowing lava. This crust insulates the molten lava, allowing it to flow further downstream.

Within the moat, there is a relatively "fresh" black lava flow, estimated to be only 100-200 years old, partially encircling the island block. This lava flow contains an active steam vent below the summit area. Other steam vents are also present within the moat, in the caldera, and on the southern flanks of Mt Suswa.

The inner caldera of Mt Suswa, as observed today, features a unique structure. It is up to 500 meters deep and varies in width, ranging from 4.8 kilometers at its narrowest point to over 5.7 kilometers at its widest along an east-west azimuth. The inner caldera is characterized by circular ring graben, creating a trench or "moat" with almost vertical sides. This moat completely encircles a raised and tilted central "island" block, which partially constitutes the eastern flank of the Ol Doinyo Nyukie cone. The volcano's structure suggests that a significant portion of the later volcano has subsided into the moat, leaving a deep half-bowl shape with vertical sides plunging 500 meters into the moat. The island block at the center is home to a relic cedar forest.



Jim W. Simmons :Sketch plan of Mt Suswa cave area, showing the density of lava tubes.

